

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau(43) International Publication Date  
18 September 2003 (18.09.2003)

PCT

(10) International Publication Number  
WO 03/075975 A1(51) International Patent Classification<sup>7</sup>: A61L 27/46, 27/56, 24/00

(21) International Application Number: PCT/EP03/01812

(22) International Filing Date: 22 February 2003 (22.02.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
02005844.2 14 March 2002 (14.03.2002) EP(71) Applicant (for all designated States except US):  
**DEGRADABLE SOLUTIONS AG** [CH/CH]; Wag-  
istrasse 23, CH-8952 Schlieren (CH).

(72) Inventors; and

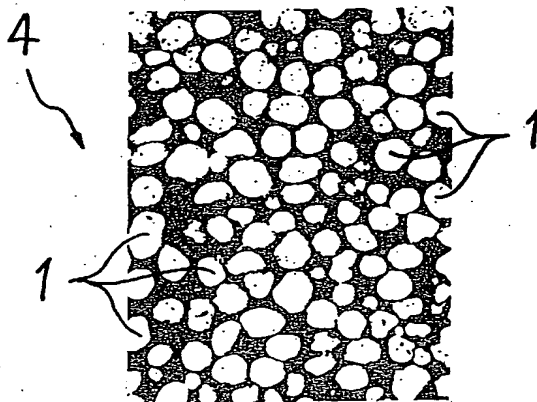
(75) Inventors/Applicants (for US only): **MASPERO, Fab-**  
**rizio, Alessandro** [CH/CH]; Kirchgasse 1, CH-8001  
Zürich (CH). **RUFFIEUX, Kurt** [CH/CH]; Bühlack-  
erstrasse 8, CH-8952 Schlieren (CH).(74) Agents: **SCHREIBER, Wolfgang, F. et al.**; Riederer  
Hasler & Partner Patentanwälte AG, Elestastrasse 8,  
CH-7310 Bad Ragaz (DE).(81) Designated States (national): AE, AG, AL, AM, AT, AU,  
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,  
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,  
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,  
MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE,  
SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,  
VC, VN, YU, ZA, ZM, ZW.(84) Designated States (regional): ARIPO patent (GH, GM,  
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),  
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,  
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI,  
SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN,  
GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: POROUS BIOCOMPATIBLE IMPLANT MATERIAL AND METHOD FOR ITS FABRICATION



(57) Abstract: There is described a biocompatible and biodegradable implant for a cavity in a bone of a living organism which is made of a biocompatible and biodegradable granules which are selected from the group consisting of biopolymers, bioglasses, bioceramics preferably calcium sulfate, calcium phosphate such as monocalcium phosphate monohydrate, monocalcium phosphate anhydrous, dicalcium phosphate dihydrate, dicalcium phosphate anhydrous, tetracalcium phosphate, calcium orthophosphate phosphate,  $\alpha$ -tetracalcium phosphate,  $\beta$ -tricalcium phosphate, apatite such as hydroxyapatite, or a mixture thereof. The biocompatible and biodegradable granules are provided with a coating, which comprises at least one layer of a biocompatible and biodegradable polymer which is selected from the group consisting of poly( $\alpha$ -hydroxyesters), poly(orthoesters), polyanhydrides, poly(phosphazenes), poly(propylene fumarate), poly(ester amides), poly(ethylene fumarate), polylactide, polyglycolide, polycaprolactone, poly(glycolide-co-trimethylene carbonate), polydioxanone, co-polymers thereof and blends of those polymers. The biocompatible and biodegradable implants are obtained by fusing together the polymer-coated granules through polymer-linkage of the polymer coatings of neighboring granules.

WO 03/075975 A1